



PATENT
Customer No. 22,852
Attorney Docket No. 8790.0003-00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)

John P. DONOGHUE et al.)

Application No.: 09/991,498)

Filed: November 14, 2001)

For: NEUROLOGICAL SIGNAL)
DECODING)

Group Art Unit: 3736

Examiner: Unknown

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Sir:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), Applicants bring to the attention of the Examiner the documents listed on the attached PTO 1449. This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits for the above-referenced application.

Copies of the listed documents, including any copending patent applications, are attached. Applicants respectfully request that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the

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documents as prior art against any claim in the application and Applicants determine that the cited documents do not constitute "prior art" under United States law, Applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

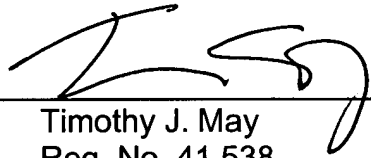
Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: September 3, 2003

By: 
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U.S. PATENT DOCUMENTS						
Examiner Initial*	Document Number	Issue Date	Name	Class	Sub Class	Filing Date If Appropriate
	4,461,304	7/24/84	Kuperstein			
	4,878,913	11/7/89	Aebischer et al.			
	5,037,376	8/6/91	Richmond et al.			
	5,215,088	6/1/93	Normann et al.			
	5,325,865	7/5/94	Beckman et al.			
	5,361,760	11/8/94	Normann et al.			
	5,617,871	4/8/97	Burrows			
	5,638,826	6/17/97	Wolpaw et al.			
	5,687,291	11/11/97	Smyth			
	5,692,517	12/2/97	Junker			
	5,735,885	4/7/98	Howard, III et al.			
	5,758,651	6/2/98	Nygard et al.			
	5,843,093	12/1/98	Howard, III			
	5,843,142	12/1/98	Sultan			
	5,855,801	1/5/99	Lin et al.			
	5,873,840	2/23/99	Neff			
	5,928,228	7/27/99	Kordis et al.			
	5,938,688	8/17/99	Schiff			
	5,938,689	8/17/99	Fischell et al.			
	5,938,690	8/17/99	Law et al.			
	6,001,065	12/14/99	DeVito			
	6,006,124	12/21/99	Fischell et al.			
	6,016,449	1/18/2000	Fischell et al.			
	6,024,700	2/15/2000	Nemirovski et al.			
	6,024,702	2/15/2000	Iversen			
	6,027,456	2/22/2000	Feler et al.			
	6,038,477	3/14/2000	Kayyali			

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INFORMATION DISCLOSURE CITATION

Atty. Docket No.: 8799-0003-00	Appln. No.: 09/991,498
Applicants: John P. DONOGHUE et al.	
Filing Date: November 14, 2001	Group: 3736

U.S. PATENT DOCUMENTS						
Examiner Initial*	Document Number	Issue Date	Name	Class	Sub Class	Filing Date If Appropriate
	6,061,593	5/9/2000	Fischell et al.			
	6,092,058	7/18/2000	Smyth			
	6,113,553	9/5/2000	Chubbuck			
	6,125,300	9/26/2000	Weijand et al.			
	6,128,538	10/3/2000	Fischell et al.			
	6,134,474	10/17/2000	Fischell et al.			
	6,154,678	11/28/2000	Lauro			
	6,161,045	12/12/2000	Fischell et al.			
	6,163,725	12/19/2000	Peckham et al.			
	6,169,981	1/2/2001	Werbos			
	6,171,239	1/9/2001	Humphrey			
	6,175,762	1/16/2001	Kirkup et al.			
	6,181,965	1/30/2001	Loeb et al.			
	6,185,455	2/6/2001	Loeb et al.			
	6,216,045	4/10/2001	Black et al.			
	6,224,549	5/1/2001	Drongelen			
	6,240,315	5/29/2001	Mo et al.			
	6,254,536	7/3/2001	DeVito			
	6,280,394	8/28/2001	Maloney et al.			
	6,353,754	3/5/2002	Fischell et al.			
	6,354,299	3/12/2002	Fischell et al.			
	6,358,202	3/19/2002	Arent			
	6,360,122	3/19/2002	Fischell et al.			
	6,427,086	7/30/2002	Fischell et al.			
	6,459,936	10/1/2002	Fischell et al.			
	6,466,822	10/15/2002	Pless			
	6,473,639	10/29/2002	Fischell et al.			

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INFORMATION DISCLOSURE CITATION

OMB No. 0651-0011

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Filing Date: November 14, 2001	Group: 3736	

U.S. PATENT DOCUMENTS

Examiner Initial*	Document Number	Issue Date	Name	Class	Sub Class	Filing Date If Appropriate
	6,480,743	11/12/2002	Kirkpatrick et al.			

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	U.S. Patent Application Publication No. US 2001/0023368 A1, September 20, 2001, Black et al.
	U.S. Patent Application Publication No. US 2001/0027336 A1, October 4, 2001, Gielen et al.
	U.S. Patent Application Publication No. US 2001/0029391 A1, October 11, 2001, Gluckman et al.
	U.S. Patent Application Publication No. US 2001/0051819 A1, December 13, 2001, Fischell et al.
	U.S. Patent Application Publication No. US 2001/0056290 A1, December 27, 2001, Fischell et al.
	U.S. Patent Application Publication No. US 2002/0002390 A1, January 3, 2002, Fischell et al.
	U.S. Patent Application Publication No. US 2002/0013612 A1, January 31, 2002, Whitehurst
	U.S. Patent Application Publication No. US 2002/0016638 A1, February 7, 2002, Mitra et al.
	U.S. Patent Application Publication No. US 2002/0099412 A1, July 25, 2002, Fischell et al.
	U.S. Patent Application Publication No. US 2002/0169485, November 14, 2002, Pless et al.
	U.S. Patent Application Publication No. US 2003/0083716, May 1, 2003, Nicolelis et al.
	U.S. Patent Application Publication No. US 2003/0093129, May 15, 2003, Nicolelis et al.
	International Publication No. WO 03/035165, May 1, 2003, Nicolelis et al.
	International Publication No. WO 03/037231, May 8, 2003, Nicolelis et al.
	Kensall D. Wise et al., "An Integrated-Circuit Approach to Extracellular Microelectrodes," IEEE Transactions on Biomedical Engineering, Vol. BME-17, No. 3, July 1970, pp 238-247
	Donald R. Humphrey et al., "Predicting Measures of Motor Performance from Multiple Cortical Spike Trains," Science, New Series, Volume 170, Issue 3959, November 13, 1970, pp 758-762
	A. Bohg, "Ethylene Diamine-Pyrocatechol-Water Mixture Shows Etching Anomaly in Boron-Doped Silicon," Journal of the Electrochemical Society, Vol. 118, No. 2, February 1971, pp 401-402
	Donald R. Humphrey, "Relating Motor Cortex Spike Trains to Measures of Motor Performance," Department of Physiology, Emory University, Brain Research, No. 40, 1972, pp 7-18
	Arnold Starr et al., "An Evaluation of Photoengraved Microelectrodes for Extracellular Single-Unit Recording," IEEE Transactions on Biomedical Engineering, Vol. BME-20, No. 4, July 1973, pp 291-293
	Kensall D. Wise et al., "A Low-Capacitance Multielectrode Probe for Use in Extracellular Neurophysiology," IEEE Transactions on Biomedical Engineering, Vol. BME-22, No. 3, May 1975, pp 212-219



INFORMATION DISCLOSURE CITATION

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TECHNOLOGY CENTER R3700

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
	V. B. Mountcastle et al., "Posterior Parietal Association Cortex of the Monkey: Command Functions for Operations Within Extrapersonal Space," The Journal of Neurophysiology, Vol. 38, No. 4, 1975, pp 871-908
	Edward M. Schmidt, "Single Neuron Recording From Motor Cortex as a Possible Source of Signals for Control of External Devices," Annals of Biomedical Engineering, Vol. 8, 1980, pp 339-349
	A. J. S. Summerlee et al., "The effect of behavioural arousal on the activity of hypothalamic neurons in unanaesthetized, freely moving rats and rabbits," Proceedings of the Royal Society of London Series B-Biological Sciences, January 1982, pp 263-272
	Spencer L. BeMent, et al., "Solid-State Electrodes for Multichannel Multiplexed Intracortical Neuronal Recording," IEEE Transactions on Biomedical Engineering, Vol. BME-33, No. 2, February 1986, pp 230-241
	Apostolos P. Georgopoulos et al., "Neuronal Population Coding of Movement Direction," Science, Vol. 233, September 26, 1986, pp 1416-1419
	Kenneth L. Drake et al., "Performance of Planar Multisite Microprobes in Recording Extracellular Single-Unit Intracortical Activity," IEEE Transactions on Biomedical Engineering, Vol. 35, No. 9, September 1988, pp 719-732
	Patrick K. Campbell et al., "A chronic intracortical electrode array: Preliminary results," Journal of Biomed. Material Res.: Applied Biomaterials, Vol. 23, No. 2, 1989, pp 245-259
	Andrew R. Mitz et al., "Learning-dependent Neuronal Activity in the Premotor Cortex: Activity during the Acquisition of Conditional Motor Associations," The Journal of Neuroscience, Vol. 11, No. 6, June 1991, pp 1855-1872
	Patrick K. Campbell et al., "A Silicon-Based, Three-Dimensional Neural Interface: Manufacturing Processes for an Intracortical Electrode Array," IEEE Transactions, 1991, pp 758-768
	A. C. Hoogerwerf et al., "A Three-Dimensional Neural Recording Array," IEEE Transactions, 1991, pp 120-123
	Gregory T. A. Kovacs et al., "Regeneration Microelectrode Array for Peripheral Nerve Recording and Stimulation," Transactions on Biomedical Engineering, Vol. 39, No. 9, September 1992, pp 893-902
	Kelly E. Jones et al., "A Glass/Silicon Composite Intracortical Electrode Array," Annals of Biomedical Engineering, Vol. 20, 1992, pp 423-437
	Miguel A. L. Nicolelis et al., "Induction of immediate spatiotemporal changes in thalamic networks by peripheral block of ascending cutaneous information," Letters to Nature, Vol. 361, February 11, 1993, pp 533-536
	Reinhard Eckhorn et al., "A new method for the insertion of multiple microprobes into neural and muscular tissue, including fiber electrodes, fine wires, needles and microsensors," Journal of Neuroscience Methods, Vol. 49, Nos. 1/2, 1993, pp 175-179
	Craig T. Nordhausen et al., "Optimizing recording capabilities of the Utah Intracortical Electrode Array," Brain Research, Vol. 637, Nos. 1/2, February 21, 1994, pp 27-36



INFORMATION DISCLOSURE CITATION

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Filing Date: November 14, 2001	Group: 3736	TECHNOLOGY CENTER R3700

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
	Jamille F. Hetke et al., "Silicon Ribbon Cables for Chronically Implantable Microelectrode Arrays," IEEE Transactions on Biomedical Engineering, Vol. 41, No. 4, April 1994, pp 314-321
	Miguel A. L. Nicolelis et al., "Spatiotemporal Structure of Somatosensory Responses of Many-Neuron Ensembles in the Rat Ventral Posterior Medial Nucleus of the Thalamus," The Journal of Neuroscience, Vol. 14, No. 6, June 1994, pp 3511-3532
	Arnold C. Hoogerwerf et al., "A Three-Dimensional Microelectrode Array for Chronic Neural Recording," IEEE Transactions on Biomedical Engineering, Vol. 41, No. 12, December 1994, pp 1136-1146
	Camilo Toro et al., "8-12 Hz rhythmic oscillations in human motor cortex during two-dimensional arm movements: evidence for representation of kinematic parameters," Departments of Neurology, Neurosurgery, and Physiology, University of Minnesota; MINCEP Epilepsy Care, P.A.; The Minnesota Epilepsy Group of United and St. Paul Children's Hospital; and Human Motor Control Section, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Electroencephalography and Clinical Neurophysiology, No. 93, 1994, pp 390-403
	Anthony L. Owens et al., "Multi-electrode array for measuring evoked potentials from surface of ferret primary auditory cortex," Journal of Neuroscience Methods, Vol. 58, Nos. 1/2, May 1995, pp 209-220
	Miguel A. L. Nicolelis et al., "Sensorimotor Encoding by Synchronous Neural Ensemble Activity at Multiple Levels of the Somatosensory System," Science, Vol. 268, June 2, 1995, pp 1353-1358
	Jerome N. Sanes et al., "Shared Neural Substrates Controlling Hand Movements in Human Motor Cortex," Science, Vol. 268, June 23, 1995, pp 1775-1777
	D. M. Halliday et al., "A Framework for the Analysis of Mixed Time Series/Point Process Data-Theory and Application to the Study of Physiological Tremor, Single Motor Unit Discharges and Electromyograms," Progress in Biophysics Molecular Biology, Vol. 64, Nos. 2/3, 1995, pp 237-278
	Qing Bai et al., "A High-Yield Process for Three-Dimensional Microelectrode Arrays," Solid-State Sensor and Actuator Workshop, Hilton Head, South Carolina, June 2-6, 1996, pp 262-265
	Changhyun Kim et al., "A 64-Site Multishank CMOS Low-Profile Neural Stimulating Probe," IEEE Journal of Solid-State Circuits, Vol. 31, No. 9, September 1996, pp 1230-1238
	Gwo-Ching Chang et al., "Real-time implementation of electromyogram pattern recognition as a control command of man-machine interface," Medical Engineering Phys., Vol. 18, No. 7, 1996, pp 529-537
	P. Nisbet, "Integrating assistive technologies: current practices and future possibilities," Med. Eng. Phys., Vol. 18, No. 3, 1996, pp 193-202
	Miguel A. L. Nicolelis et al., "Reconstructing the Engram: Simultaneous, Multisite, Many Single Neuron Recordings," Neuron, Vol. 18, April 1997, pp 529-537
	TR Scott et al., "The Monitoring of Tendon Tension with an Implantable Intratendon Probe and Its Use in the Control of Neuroprostheses," IEEE Transactions on Rehabilitation Engineering, Vol. 5, No. 2, June 1997, pp 233-235



OMB No. 0651-0011

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TECHNOLOGY CENTER R3700

Atty. Docket No.: 8790.0003400	Appln. No.: 09/991,498
Applicants: John P. DONOGHUE et al.	
Filing Date: November 14, 2001	Group: 3736

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
	Barbara M. Faggin et al., "Immediate and simultaneous sensory reorganization at cortical and subcortical levels of the somatosensory system," Proc. Natl. Acad. Science USA, Vol. 94, August 1997, pp 9428-9433
	Nicolelis, Miguel A.L., "Trigeminal System Plasticity During Facial Anesthesia," Department of Health and Human Services, Public Health Service, Grant No. 2 R01 DE11451-05, Including Summary Statement, October, 1997
	Robert M. Bradley et al., "Long term chronic recordings from peripheral sensory fibers using a sieve electrode array," Journal of Neuroscience Methods, Vol. 73, 1997, pp 177-186
	David K. Warland et al., "Decoding Visual Information From a Population of Retinal Ganglion Cells," The American Physiological Society, 1997, pp 2336-2350
	Steven P. Wise et al., "Premotor and Parietal Cortex: Corticocortical Connectivity and Combinatorial Computations," Annual Review of Neuroscience, Vol. 20, 1997, pp 25-42
	P. R. Kennedy et al., "Restoration of neural output from a paralyzed patient by a direct brain connection," NeuroReport, Vol. 9, No. 8, June 1998 pp 1707-1711
	Paolo Dario et al., "Neural Interfaces for Regenerated Nerve Stimulation and Recording," IEEE Transactions on Rehabilitation Engineering, Vol. 6, No. 4, December 1998, pp 353-363
	Nicholas G. Hatsopoulos et al., "Information about movement direction obtained from synchronous activity of motor cortical neurons," Proc. Natl. Acad. Sci. USA, Vol. 95, December 1998, pp 15706-15711
	John P. Donoghue et al., "Neural Discharge and Local Field Potential Oscillations in Primate Motor Cortex During Voluntary Movements," The American Physiological Society, 1998, pp 159-173
	Nicolelis, Miguel A.L., "Trigeminal System Plasticity During Facial Anesthesia," Department of Health and Human Services, Public Health Service, Grant No. 2 R01 DE11451-06, April, 1999
	Gregor Rainer et al., "Prospective Coding for Objects in Primate Prefrontal Cortex," The Journal of Neuroscience, Vol. 19, No. 13, July 1, 1999, pp 5493-5505
	John K. Chapin et al., "Real-time control of a robot arm using simultaneously recorded neurons in the motor cortex," Department of Neurobiology and Anatomy, MCP Hahnemann School of Medicine; and Department of Neurobiology, Duke University Medical Center, Nature Neuroscience, Volume 2, No. 7, July 1999, pp 664-670
	E. M. Maynard et al., "Neuronal Interactions Improve Cortical Population Coding of Movement Direction," The Journal of Neuroscience, Vol. 19, No. 18, September 15, 1999, pp. 8083-8093
	F. Gandolfo et al., "Cortical correlates of learning in monkeys adapting to a new dynamical environment," PNAS, Vol. 97, No. 5, February 29, 2000, pp 2259-2263
	J. F. Marsden et al., "Organization of Cortical Activities Related to Movement in Humans," The Journal of Neuroscience, Vol. 20, No. 6, March 15, 2000, pp 2307-2314
	D. Gareth Evans et al., "Controlling Mouse Pointer Position Using an Infrared Head-Operated Joystick," IEEE Transactions on Rehabilitation Engineering, Vol. 8, No. 1, March 2000, pp 107-117



INFORMATION DISCLOSURE CITATION

Atty. Docket No.: 8790.0003-00	Appln. No.: 09/991,498	RECEIVED SEP 04 2003 TECHNOLOGY CENTER R3700
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
	Qing Bai et al., "A High-Yield Microassembly Structure For Three-Dimensional Microelectrode Arrays," IEEE Transactions on Biomedical Engineering, Vol. 47, No. 3, March 2000, pp 281-289
	Nicolelis, Miguel A.L., "Trigeminal System Plasticity During Facial Anesthesia," Department of Health and Human Services, Public Health Service, Grant No. 2 R01 DE11451-07, April, 2000
	Nicolelis, Miguel A.L., "Cortico-fugal Modulation of Tactile Sensory Processing," Department of Health and Human Services, Public Health Service, National Institute of Dental and Craniofacial Research of the National Institutes of Health, Grant No. 1 R01 DE013810-01 A1, June, 2000
	Jonathan R. Wolpaw et al., "Brain-Computer Interface Technology: A Review of the First International Meeting," IEEE Transactions on Rehabilitation Engineering, Vol. 8, No. 2, June 2000, pp 164-173
	Simon P. Levine et al., "A Direct Brain Interface Based on Event-Related Potentials," IEEE Transactions on Rehabilitation Engineering, Vol. 8, No. 2, June 2000, pp 180-185
	Robert E. Isaacs et al., "Work Toward Real-Time Control of a Cortical Neural Prosthesis," IEEE Transactions on Rehabilitation Engineering, Vol. 8, No 2, June 2000, pp 196-198
	Scott Makeig et al., "A Natural Basis for Efficient Brain-Actuated Control, IEEE Transactions on Rehabilitation Engineering, Vol. 8, No. 2, June 2000, pp 208-211
	Johan Wessberg et al., "Real-time prediction of hand trajectory by ensembles of cortical neurons in primates," Nature, Vol. 408, November 16, 2000, pp 361-365
	Jerome N. Sanes et al., "Plasticity and Primary Motor Cortex," Annual Reviews, Neuroscience, Brown University Library, Vol. 23, 2000, pp 393-415
	Jonathan C. Jarvis et al., "The application and technology of implantable neuromuscular stimulators: an introduction and overview," Medical Engineering & Physics, No. 23, January 11, 2001, pp 3-7
	Miguel A. L. Nicolelis, "Real-time direct interfaces between the brain and electronic and mechanical devices could one day be used to restore sensory and motor functions lost through injury or disease. Hybrid brain-machine interfaces also have the potential to enhance our perceptual, motor and cognitive capabilities by revolutionizing the way we use computers and interact with remote environments," Nature, Vol. 409, January 18, 2001, pp 403-407
	Gerald E. Loeb et al., "BION™ system for distributed neural prosthetic interfaces," Medical Engineering & Physics, Vol. 23, January 26, 2001, pp 9-18
	Patrick J. Rousche et al., "Flexible Polyimide-Based Intracortical Electrode Arrays with Bioactive Capability," IEEE Transactions on Biomedical Engineering, Vol. 48, No. 3, March 2001, pp 361-371
	Nicolelis, Miguel A.L., "Trigeminal System Plasticity During Facial Anesthesia," Department of Health and Human Services, Public Health Service, Grant No. 2 R01 DE11451-08, April, 2001
	Qing Bai et al., "Single-Unit Neural Recording with Active Microelectrode Arrays," IEEE Transactions on Biomedical Engineering, Vol. 48, No. 8, August 2001, pp 911-920



INFORMATION DISCLOSURE CITATION

Atty. Docket No.: 8790-0002-000	Appln. No.: 09/991,498	RECEIVED SEP 04 2003 TECHNOLOGY CENTER B3700
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Filing Date: November 14, 2001	Group: 3736	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
	David L. Zealear et al., "The Biocompatibility, Integrity, and Positional Stability of an Injectable Microstimulator for Reanimation of the Paralyzed Larynx," IEEE Transactions on Biomedical Engineering, Vol. 48, No. 8, August 2001, pp 890-897
	Dawn M. Taylor et al., "Using Virtual Reality to Test the Feasibility of Controlling an Upper Limb Fes System Directly from Multiunit Activity in the Motor Cortex," Arizona State University; and The Neurosciences Institute, Summer 2001, pp 1-3
	Ranu Jung et al., "Real-Time Interaction Between a Neuromorphic Electronic Circuit and the Spinal Cord," IEEE Transactions on Neural Systems and Rehabilitation Engineering, Vol. 9, No. 3, September 2001, pp 319-326
	Shay Shoham, "Advances Towards an Implantable Motor Cortical Interface," The University of Utah, December 2001, pp 1-157
	John K. Chapin et al., "Neural Prostheses for Restoration of Sensory and Motor Function," CRC Press, LLC, 2001, Chapters 6, 8 and 9, pp 179-219, pp 235-261, pp 263-283
	Andrew B. Schwartz et al., "Extraction algorithms for cortical control of arm prosthetics," The Neuroscience Institute; and Department of Bioengineering, Arizona State University, 2001, pp 701-707
	István Ulbert et al., "Multiple microelectrode-recording system for human intracortical applications," Journal of Neuroscience Methods, Vol. 106, 2001, pp 69-79
	Mijail D. Serruya et al., "Instant Neural Control of a Movement Signal," Nature, Vol. 416, March 14, 2002, pp 141-142
	Nicolelis, Miguel A.L., "Corticofugal Modulation of Tactile Sensory Processing," Department of Health and Human Services, Public Health Service, National Institute of Dental and Craniofacial Research of the National Institutes of Health, Grant No. 5 R01 DE013810-02, March, 2002
	Nicolelis, Miguel A.L., "Trigeminal System Plasticity During Facial Anesthesia," Department of Health and Human Services, Public Health Service, Grant No. 2 R01 DE11451-09, April, 2002
	Dawn M. Taylor et al., "Direct Cortical Control of 3D Neuroprosthetic Devices," Science, Vol. 296, June 7, 2002, pp 1829-1832
	John P. Donoghue, "Connecting cortex to machines: recent advances in brain interfaces," Nature Neuroscience Supplement, Vol. 5, November 2002, pp 1085-1088
	Y. Gao, et al., "Probabilistic Inference of Hand Motion from Neural Activity in Motor Cortex," In Advances in Neural Information Processing Systems 14, The MIT Press, 2002, pp 1-8
	Mijail Serruya et al., "Robustness of neuroprosthetic decoding algorithms," Biological Cybernetics, 2003, pp 1-10
	Miguel A. L. Nicolelis, "Brain-machine interfaces to restore motor function and probe neural circuits," Nature Reviews, Neuroscience, Vol. 4, May 2003, pp 417-422
	Frank Wood et al., "On the Variability of Manual Spike Sorting," Brown University, Providence, RI, July 1, 2003, pp 1-19



OMB No. 0651-0011

INFORMATION DISCLOSURE CITATION

Atty. Docket No.: 8790.0003-00	Appln. No.: 09/991,498
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OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)	
	Wei Wu et al., "Modeling and Decoding Motor Cortical Activity using a Switching Kalman Filter," Brown University, Providence, RI, July 1, 2003, pp 1-30

Examiner	Date Considered
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